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| D - Germany |
| **Centralizing office** | **Postal address** | **Telephone, Telefax, Electronic-mail** | **Remarks** |
|  |  |  |  |
| BundesnetzagenturReferat 511 | Postfach 80 0155003 Mainz | PHONE: +49 6131 185419TELEFAX: +49 6131 185602EMAIL: 511.postfach@bnetza.de |  |
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Stations in the Terrestrial radiocommunication services

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** |
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| **Berlin (IMS)** | Seidelstrasse 4913405 BerlinGermany | PHONE: +49 30 43741305TELEFAX: +49 30 43741184EMAIL: berl8.postfach@bnetza.de |

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| **Geographical coordinates** | **Types of measurements** | **Ranges of frequencies for each measurement** | **Hours of service (UTC)** | **Remarks** |
| 52°34'00"N013°18'00"E | Field strength or power flux-density measurements   | 10 kHz - 40 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 52°34'00"N013°18'00"E | Direction-finding measurements   | 2 MHz - 3 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 52°34'00"N013°18'00"E | Automatic spectrum occupancy surveys   | 10 kHz - 3 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 52°34'00"N013°18'00"E | Frequency measurements   | 10 kHz - 40 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 52°34'00"N013°18'00"E | Bandwidth measurements   | 10 kHz - 40 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** |
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| **Darmstadt (IMS)** | Auf der Ludwigshöhe 20464285 DarmstadtGermany | PHONE: +49 6151 170205TELEFAX: +49 6151 170180EMAIL: esch8.postfach@bnetza.de |

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| **Geographical coordinates** | **Types of measurements** | **Ranges of frequencies for each measurement** | **Hours of service (UTC)** | **Remarks** |
| 49°51'00"N008°40'00"E | Frequency measurements   | 10 kHz - 40 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 49°51'00"N008°40'00"E | Field strength or power flux-density measurements   | 10 kHz - 40 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 49°51'00"N008°40'00"E | Direction-finding measurements   | 2 MHz - 3 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 49°51'00"N008°40'00"E | Automatic spectrum occupancy surveys   | 10 kHz - 3 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 49°51'00"N008°40'00"E | Bandwidth measurements   | 10 kHz - 40 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** |
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| **Itzehoe (IMS)** | Postkamp 2625524 Breitenburg-NordoeGermany | PHONE: +49 4821 895205TELEFAX: +49 4821 895180EMAIL: hamb8.postfach@bnetza.de |

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| **Geographical coordinates** | **Types of measurements** | **Ranges of frequencies for each measurement** | **Hours of service (UTC)** | **Remarks** |
| 53°54'00"N009°31'00"E | Field strength or power flux-density measurements   | 10 kHz - 40 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 53°54'00"N009°31'00"E | Direction-finding measurements   | 2 MHz - 3 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 53°54'00"N009°31'00"E | Automatic spectrum occupancy surveys   | 10 kHz - 3 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 53°54'00"N009°31'00"E | Frequency measurements   | 10 kHz - 40 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 53°54'00"N009°31'00"E | Bandwidth measurements   | 10 kHz - 40 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** |
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| **Konstanz (IMS)** | Zur Allmannshöhe 2778464 KonstanzGermany | PHONE: +49 7531 935205TELEFAX: +49 7531 935183EMAIL: karl8.postfach@bnetza.de |

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| **Geographical coordinates** | **Types of measurements** | **Ranges of frequencies for each measurement** | **Hours of service (UTC)** | **Remarks** |
| 47°41'00"N009°12'00"E | Frequency measurements   | 10 kHz - 22 GHz   | H24   |   |
| 47°41'00"N009°12'00"E | Field strength or power flux-density measurements   | 10 kHz - 22 GHz   | H24   |   |
| 47°41'00"N009°12'00"E | Direction-finding measurements   | 2 MHz - 3 GHz   | H24   |   |
| 47°41'00"N009°12'00"E | Automatic spectrum occupancy surveys   | 10 kHz - 3 GHz   | H24   |   |
| 47°41'00"N009°12'00"E | Bandwidth measurements   | 10 kHz - 22 GHz   | H24   |   |

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** |
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| **Krefeld (IMS)** | Lind 5547509 RheurdtGermany | PHONE: +49 2845 960205TELEFAX: +49 2845 960183EMAIL: koel8.postfach@bnetza.de |

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| **Geographical coordinates** | **Types of measurements** | **Ranges of frequencies for each measurement** | **Hours of service (UTC)** | **Remarks** |
| 51°26'00"N006°28'00"E | Frequency measurements   | 10 kHz - 10 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 51°26'00"N006°28'00"E | Direction-finding measurements   | 2 MHz - 3 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 51°26'00"N006°28'00"E | Automatic spectrum occupancy surveys   | 10 kHz - 3 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 51°26'00"N006°28'00"E | Field strength or power flux-density measurements   | 10 kHz - 10 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 51°26'00"N006°28'00"E | Bandwidth measurements   | 10 kHz - 10 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** |
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| **Leipzig (IMS)** | Max Liebermann Str. 6304157 LeipzigGermany | PHONE: +49 341 9997102TELEFAX: +49 341 9996181EMAIL: leip8postfach@bnetza.de |

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| **Geographical coordinates** | **Types of measurements** | **Ranges of frequencies for each measurement** | **Hours of service (UTC)** | **Remarks** |
| 51°23'00"N012°22'00"E | Direction-finding measurements   | 20 MHz - 3 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 51°23'00"N012°22'00"E | Automatic spectrum occupancy surveys   | 10 kHz - 3 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 51°23'00"N012°22'00"E | Frequency measurements   | 10 kHz - 18 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 51°23'00"N012°22'00"E | Field strength or power flux-density measurements   | 10 kHz - 18 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 51°23'00"N012°22'00"E | Bandwidth measurements   | 10 kHz - 18 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** |
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| **München (IMS)** | Betzenweg 3281247 MünchenGermany | PHONE: +49 89 38606205TELEFAX: +49 89 38606183EMAIL: augs8.postfach@bnetza.de |

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| **Geographical coordinates** | **Types of measurements** | **Ranges of frequencies for each measurement** | **Hours of service (UTC)** | **Remarks** |
| 48°10'00"N011°28'00"E | Direction-finding measurements   | 2 MHz - 3 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 48°10'00"N011°28'00"E | Automatic spectrum occupancy surveys   | 10 kHz - 3 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 48°10'00"N011°28'00"E | Frequency measurements   | 10 kHz - 40 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 48°10'00"N011°28'00"E | Field strength or power flux-density measurements   | 10 kHz - 40 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |
| 48°10'00"N011°28'00"E | Bandwidth measurements   | 10 kHz - 40 GHz   |   | Monday to Thursday: 0800 to 1600 (local time) Friday: 0800 to 1500 (local time)   |

Stations in the Space radiocommunication services

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| **Name of the station** | **Postal address** | **Telephone, Telefax, Electronic-mail** |
|  |  |  |  |
| **Leeheim** | Satellitenmessstelle64560 Riedstadt-LeeheimGermany | PHONE: +49 6158 9400TELEFAX: +49 6158 940180EMAIL: esch16.postfach@bnetza.de |

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| **1. Geographical coordinates** |
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| 49°51'00"N  |
| 008°24'00"E  |

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| **2. Hours of service** |
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| April to October: 0500-1400 h from Monday to FridayNovember to March: 0600-1500 h from Monday to Friday  |

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| **3. Information on antennas in use** |
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| Dipole antenna array for frequency range (a); 12 m Cassegrain antenna for frequency ranges (b), (c), (e), (f); 8.5 m Cassegrain antenna for frequency ranges (d) and (i); 7 m prime focus antenna for frequency ranges (g) and (h).   |

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| **4. Range of azimuth and elevation angles** |
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| 360°, 90°   |

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| **5. Maximum attainable accuracy in determining orbital positions of space stations** |
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| 0.2/f[GHz] [no orbital position measurements within frequency range (a)].   |

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| **6. Information on system polarization** |
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| Linear polarization (horizontal and vertical) in all frequency ranges. Additional circular polarization (RHC and LHC) in the frequency ranges (d) to (i). In frequency range (d) fixed polarization (RHC and LHC). Polarization angle adjustment in frequency ranges (d), (e), (f), (g), (h) and (i).   |

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| **7. System noise temperature** |
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| (a) 130 MHz - 1000 MHz: 650 K(b) 1500 MHz - 1800 MHz: 380 K(c) 2100 MHz - 2300 MHz: 380 K(d) 3400 MHz - 4200 MHz: 180 K(e) 4300 MHz - 8500 MHz: 250 K(f) 10.7 GHz - 12.75 GHz: 150 K(g) 1 GHz - 12.75 GHz: 200 K(h) 12.5 GHz - 26.5 GHz: 350 K(i) 17.7 GHz - 22 GHz: 318 K   |

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| **8. Ranges of frequencies with the maximum attainable accuracy of frequency measurement for each frequency range** |
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| (a) 130 MHz - 1000 MHz: 1 × 10-12(b) 1500 MHz - 1800 MHz: 1 × 10-12(c) 2100 MHz - 2300 MHz: 1 × 10-12(d) 3400 MHz - 4200 MHz: 1 × 10-12(e) 4300 MHz - 8500 MHz: 1 × 10-12(f) 10.7 GHz - 12.75 GHz: 1 × 10-12(g) 1 GHz - 12.75 GHz: 1 × 10-12(h) 12.5 GHz - 26.5 GHz: 1 × 10-12(i) 17.7 GHz - 22.0 GHz: 1 × 10-12   |

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| **9. Ranges of frequencies in which field strength or power flux-density measurements can be performed** |
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| (a) 130 MHz - 1000 MHz(b) 1500 MHz - 1800 MHz(c) 2100 MHz - 2300 MHz(d) 3400 MHz - 4200 MHz(e) 4300 MHz - 8500 MHz(f) 10.7 GHz - 12.75 GHz(g) 1 GHz - 12.75 GHz(h) 12.5 GHz - 26.5 GHz(i) 17.7 GHz - 22 GHz   |

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| **10. Minimum value of measurable field strength or power flux-density with indication of attainable accuracy of measurement** |
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| (a) -159... -151 dBW/m²; ± 2.5 dB(b) -175 dBW/m²; ± 1.5 dB(c) -175 dBW/m²; ± 1.5 dB(d) -176 dBW/m²; ± 1.5 dB(e) -175 dBW/m²; ± 1.5 dB(f) -175 dBW/m²; ± 1.5 dB(g) -165 dBW/m²; ± 1.5 dB(h) -164 dBW/m²; ± 1.5 dB(i) -169 dBW/m²; ± 1.5 dBBandwidth 4 kHz, S/N ≥ 10 dB.   |

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| **11. Information available for bandwidth measurements** |
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| Bandwidth measurements in accordance with the methods described in the Spectrum Monitoring Handbook.   |

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| **12. Information available for spectrum occupancy measurements** |
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| Computer controlled receiving system using directional antennas for frequency ranges (a) to (i) or omni-directional antennas for frequencies < 2500 MHz. Up to 4 independent frequency bands of 600 MHz each are in time shift mode recordable. The results are presented graphically as spectrograms.   |

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| **13. Information available for orbit occupancy measurements** |
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| Automatic orbit occupancy measurements are carried out in the frequency ranges (a) to (i).   |

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